USER INTERFACE FOR A RESOURCE SEARCH TOOL

RELATED APPLICATIONS

[0001] The present application is a continuation-in-part of U.S. patent application Ser. No. 10/306,276, entitled "WEB PAGE PARTITIONING, REFORMATTING AND NAVIGATION", specifically incorporated by reference herein for all that it discloses and teaches.

TECHNICAL FIELD

[0002] The invention relates generally to resource browsers, and more particularly to providing a user interface for a resource search tool.

BACKGROUND OF THE INVENTION

[0003] Most Web pages are designed for display on a desktop or laptop display screen. Such display screens have somewhat consistent sizes and aspect ratios, which allows the Web page designer to make certain assumptions about the layout of text, graphics, and logical sections of the Web page. For example, Web pages are designed to place advertisements, controls, links, text, and other content within the anticipated bounds of a desktop or laptop display screen.

[0004] One problem with this existing approach is that the incompatible sizes and aspect ratios of handheld devices or large screen displays do not accommodate a typical Web page designed for a desktop or laptop system. For example, **FIG. 1** illustrates three parts of a Web page **100** as shown on a handheld device at different horizontal scroll points. An article **110** from Slate, an online magazine, is too wide to be displayed on a handheld device without horizontal scrolling. To read the article **110**, the user must scroll horizontally back and forth as each line of text is read. This approach has very negative usability characteristics, including the loss of spatial context perceivable by the user. Users are relatively comfortable with scrolling down to read text, but users are less comfortable with horizontal scrolling (back and forth), particularly with every line of text. Likewise, if the Web page is displayed on a large screen display, such as in a convention hall in which the display is zoomed in to make the text large enough for the audience members to see, repeated horizontal scrolling is unworkable for most audiences.

[0005] In addition, for Web pages with multiple sections of layout, such as the page shown in **FIG. 3**, multiple peripheral sections may take up valuable display real estate in a handheld device or large screen display. As shown by display **102** of **FIG. 1**, the inclusion of section **104** in the display **102** severely limits the amount of section **110** displayed in the first horizontal position, thereby contributing to the need to scroll horizontally in order to read the article in section **110**.

[0006] The problem of viewing Web pages on a small screen, such as that of a handheld device or PDA, is particularly emphasized when a user is searching the Web. For example, when viewing the search results from a popular Web search engine, such as www.google.com, references or links to Web pages satisfying the specified search criteria are listed on the search results Web page. However, after selecting one of the links to a search result target page, it is difficult for a user to quickly find the search-criteria-satisfying elements (i.e., search hits) of the resulting Web page because of the small size of the handheld device's display. A zooming operation can help to make the text readable, but, with the display zoomed, portions of the search results target page are typically obscured and spatial context is lost. Again, inconvenient horizontal scrolling, for example, may be required to incrementally view the entire page. Therefore, the options of zooming and scrolling do not provide a convenient and comfortable user interface for a search tool.

SUMMARY OF THE INVENTION

[0007] Embodiments of the present invention solve the discussed problems by annotating search result target resources (e.g., search result target pages, documents, images) to highlight search hits in various portions or logical sections of each resource. In this manner, the issues of zooming and spatial context are separated to some extent. A zoomed out resource may be displayed to maximize the amount of the resource that can be viewed without scrolling, while providing hit annotations associated with each logical section. Thereafter, the logical section can be selected for viewing in a zoomed in, reformatted display.

[0008] In implementations of the present invention, articles of manufacture are provided as computer program products. One embodiment of a computer program product provides a computer program storage medium readable by a computer system and encoding a computer program that annotates a representation of a search result target resource identified in a resource search based on at least one search criterion. Another embodiment of a computer program product may be provided in a computer data signal embodied in a carrier wave by a computing system and encoding the computer program that annotates a representation of a search result target resource identified in a resource search based on at least one search criterion.

[0009] The computer program product encodes a computer program for executing on a computer system a computer process for annotating a representation of a search result target resource identified in a resource search based on at least one search criterion. The representation of the search result target resource is generated. A layout analysis of the search result target resource is performed to identify one or more logical sections of the search result target resource. A linguistic analysis of the search result target resource is performed. The representation of the search result target resource is annotated based on the linguistic analysis to indicate at least one logical section of the search result target resource includes an element that satisfies the at least one search criterion.

[0010] In another implementation of the present invention, a method of annotating a representation of a search result target resource identified in a resource search based on at least one search criterion is provided. The representation of the search result target resource is generated. A layout analysis of the search result target resource is performed to identify one or more logical sections of the search result target resource. A linguistic analysis of the search result target resource is performed. The representation of the search result target resource is annotated based on the linguistic analysis to indicate at least one logical section of the search result target resource includes an element that satisfies the at least one search criterion.